



SEPTEMBER MEETING
Digital Signal Processing - Tips and Tricks

DATE: Thursday, September 27, 2007

PLACE : Raffle's – 10160 Reading Road (see below for directions)

TIME : 5:30 p.m. to 6:00 p.m. - Social Time
6:00 p.m. to 7:00 p.m. - Dinner
7:00 p.m. to 8:30 p.m. - Presentation

COST FOR DINNER: \$10.00 per person – REGARDLESS OF MEMBERSHIP OR MEMBERSHIP GRADE!

NOTE: DINNERS ARE ALWAYS OPTIONAL - YOU MAY ATTEND THE PROGRAM ONLY.

MENU SELECTIONS: Maryland Crab Cakes, Baked Pork Chops with Baked Apples, Boneless Chicken in Sherry Wine Sauce, Twice Baked Potatoes, Wild Rice, Sautéed Vegetables, Tossed Salad, Dinner Rolls and Butter, Assorted Bar Cookies, Coffee, Tea, Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks.

LOCATION: Raffle's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately ¾ of a mile to Reading Rd. and turn right on Reading.

RESERVATIONS: Please call the Cincinnati Section Voice Mailbox at **513-629-9380**, by **Noon, Tuesday, September 25, 2007** if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number. You can also make a reservation by e-mailing our Arrangements Chair, Ron Harbaugh, at ron.harbaugh@ieee.org.

PE CREDITS: Depending on the subject matter, attendance at IEEE Cincinnati Section Meetings now qualifies the attendee for Professional Development Hours towards renewal of Professional Engineers Licenses. Required documentation will be available following the meeting! The Section Meetings also provide a great opportunity to network with fellow engineers in the area.

ABOUT THE MEETING: The meeting this month features Mark Borgerding of 3dB Labs. He will discuss his chapter in the new IEEE Press book, "Streamlining Digital Signal Processing: A Tricks of the Trade Guidebook", edited by Rick Lyons. Mr. Borgerding will explain how the popular overlap-save fast convolution filtering technique can be extended to create a flexible and computationally efficient bank of filters, with frequency translation and decimation implemented in the frequency domain.

ABOUT THE SPEAKER: Mark Borgerding is a principal engineer of 3dB Labs, Inc. in West Chester that specializes in DSP consulting and contract engineering. Mark is a Section member, a contributor to the comp.dsp newsgroup, and continues to tinker with his KISSFFT (<http://sourceforge.net/projects/kissfft/>).

CHAIR'S MESSAGE

by Brian Resnick, Section Chair

Welcome back. The summer brought many changes.

We extend our deepest sympathies to the family of Richard Reiman. Dick was a long-time active member of the Section holding the positions of Secretary, Vice-Chair, and Chairman, and he was our Historian since 1989. You can find his articles on our web site. Dick passed away on July 3, 2007.

The Section wishes to thank Randy Holt for many years of service as Membership Development chair, as well as in other positions including Chairman. Randy is in retirement transition between homes here and elsewhere.

Please welcome Frank Zhou as our Membership Development chair. Frank is professor of Electrical and Computer Engineering Technology at the University of Cincinnati.

Please welcome the return of Fred Nadeau. Fred has agreed to serve as the Arrangements chair.

May's meeting featured many student projects from the University of Cincinnati and Miami University. Their projects remind us that the future remains very exciting. The Section wishes to thank all of the students/graduates who participated.

In September, Mark Borgerding, a member of our Section and principal engineer of 3dB Labs, will be presenting some Digital Signal Processing tips and tricks. This is sure to be a very interesting meeting.

As always, if you are interested in elevating your membership status to Senior Member, we can help you at the end of any meeting. Senior Member status is an honor bestowed upon members who have been engineers for at least 10 years, and who have contributed significantly to the field. There is no cost to you, except a few minutes to complete some forms, and it helps the Section.

See you on September 27 at Raffles.

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

Stephen Boston	Keith Marsolo	Tim Tylinski
Wei Huang Fu	Marco M. Morana	Gayathri Vijayasathya
Slobodan M. Gataric	Samuel M. Nicaise	W. Keith Walker
John F. Kline	Daniel J. O'Neill	Qingzhou Xu
Joe G. Krese	Dan Rose	Junmei Zhong
Colin J. Lambert	Roger C. Seifried	

We wish to welcome these new members to the Cincinnati Section!!!

New Cincinnati Section Senior Member

The Cincinnati Section would like to congratulate our newest Senior Member,

Paul Moore
whose upgrade application was recently approved.

If you are interested in upgrading your membership to Senior Member, please contact any member of the Executive Committee. You can also see our PACE Chair, Brian Resnick, or any other member of the Executive Committee immediately following any Section Meeting.

RICHARD J. REIMAN (Feb. 17, 1923 to July 3, 2007)

Dick Reiman, Historian of the IEEE Cincinnati Section, passed away on July 3rd after a battle with prostate cancer. Dick was highly involved in the Section, also serving as Section Chair for a time. In addition, Dick provided a wonderful history of Electrical Engineering through his articles posted on the IEEE Cincinnati Section Web Page. In a 1999 Christmas letter, Dick once noted that he grew up in a family with love all around, enjoyed being a Boy Scout and Delta Tau Delta fraternity man, and learned much in grade and high school. In the letter, he reflected on his life up to that point.

Dick graduated from the University of Cincinnati in 1949, after three years in the United States Army from 1943 to 1946 where he completed his service as a 2nd Lieutenant in the Transportation Corps. He found the Army to be a very profound experience. His cooperative experiences included Wright Aeronautical Corporation in 1942-43, where Wright-Cyclone engines were manufactured for B17 and B24 bombers, Hobart Manufacturing at Troy, Ohio (Kitchen Aid products), and the General Electric Service Shop in Cincinnati (rewinding motors). Post graduate work included one year at Westinghouse M&R on Laidlaw Avenue (manufacturing transformer-rectifier trains for coal mines) and with Ohio Power of AEP doing relay and circuit breaker work. Dick's thesis at U.C. was on controls.

In his career at CG&E (1951-1988), Dick Reiman participated in construction of CG&E's coal fired steam generation units from W. C. Beckjord Station Unit 1 in 1951 through conversion of W. H. Zimmer to a coal fired plant.

In 1953, the General Engineering Department Electrical Section was expanding due to construction at W. C. Beckjord Station. Dick served as Field Engineer on Units 3, 4, & 5, and as Electrical Sponsor on Unit 6. He also furnished field assistance on the startup of Miami Fort Unit 6. The Electrical Section did power plant projects, substations and communications. The field force was usually one engineer with an occasional Co-op to help. The field office had a pot-bellied stove, dome lighting, hard chairs and, if it was hot, the windows could be opened for air conditioning!!!

Some of the difficult days during Dick's 37-year career at CG&E were the fire at West End Station in May 1967, which idled all six generating units and the startup of W. C. Beckjord Unit 6 without turbine bearing oil in 1969. At West End, the chore was to locate grounded cables in a cable trough, and splice around the grounded section. With twelve hour days, all six units were restored in less than one week. The startup of W. C. Beckjord Unit 6 needed additional time to correct punch list items and "iron out" the kinks.

Dick thoroughly enjoyed IEEE work with the Power Generation Committee from 1963 to 1988 and participated in Standards work on protection and interlocking, fire retardant cables, and annunciator systems. On September 1, 1988, Dick retired from CG&E after 37 years in a job that he thoroughly enjoyed.

Dick received much from his church life at St. John's Church and also from IEEE, the Retired Engineers and golf. After retirement, Dick and his wife Marilyn enjoyed traveling and he found volunteering at the Zoo and the Museum Center to be rewarding and fun.

Other activities which provided Dick with enjoyment during his retirement years were photography and reading. Dick took a class on photography and enjoyed a class he took dealing with "seeing" before "shooting", which he was told was more important than the equipment. This was also the theme in the sketching class he took. Dick read such books as "The Compete Bible Handbook" by Bowker, Michener's "The Source", "Scholars in Foxholes" by L. E. Keefer and "Citizen Soldier" on the GI's in WWII. One summer, he learned Yoga and enjoyed reading about and practicing senior Yoga.

At the conclusion of his 1999 Christmas letter, Dick stated that "It's been a great life, seemingly very short, but with great moments of joy." The IEEE would like to thank Dick and his family for making us a part of that life.

IEEE NEWS

Conference to Examine Role Technology Can Play in Managing Health Care Costs and Improving Patient Care

WASHINGTON (7 June 2007) -- The role technology can play in helping the United States manage health care costs by advancing the diagnosis, treatment and prevention of disease will be examined in a conference at the National Institute of Standards and Technology (NIST) in Gaithersburg, Md., on 25 September.

Major technological advances have greatly improved patient care since the 1970s, but have come at a steep price. U.S. health care spending is expected to rise from nearly \$2 trillion in 2002 to more than \$4 trillion by 2015.

The goal of "Economic Strategy for Health Care through Bio and Information Standards and Technologies" is to emphasize the need to develop a long-term economic strategy for implementing bio and health care information technologies into our health care system. By developing breakthrough biomeasurement, bioinformatics, biologically based and health-information technologies, rising health care costs can be reigned in and quality can be improved.

"The outcome of this conference will benefit patients and society by improving the quality and convenience of care, managing health care costs and increasing access to affordable and effective health care throughout the world," Biotechnology Council Chair Dick Doyle said.

The all-day conference will bring together key government, industry, academic and research leaders and patient advocates. This will help policy makers and corporate leaders understand where technology investments should be made to enhance health care quality, wellness and disease prevention, while minimizing cost. Dr. Jerry Grossman, senior Fellow and director of the Harvard/Kennedy School Health Care Delivery Policy Program and chairman emeritus of New England Medical Center, is the honorary chair.

"Because of the complexity and scope of the issue, the conference requires decision makers, researchers, engineers and providers from many traditional disciplines to collaborate and tackle the challenges together," Doyle said.

For more information and to register, see <http://www.itl.nist.gov/Healthcare/conf/index.htm>.

IEEE TECHNOLOGY-RELATED NEWS STORIES AIRED IN MORE THAN TWO-DOZEN U.S. TV MARKETS; VIEW LATEST, ARCHIVED SPOTS

Beginning in 2005, in collaboration with the American Institute of Physics (AIP) and other technical professional organizations, IEEE-USA has helped to underwrite almost 300 local television news stories on engineering and science.

Since January 2006, stories about IEEE-related technologies aired in more than two-dozen U.S. TV markets, including New York, Chicago, Philadelphia, San Francisco, Tampa-St. Petersburg, Phoenix and Miami -- broadcast on ABC, CBS, NBC, Fox, Univision, cable and independent TV affiliates. The average number of household views for these markets is estimated at more than 70 million.

Recent IEEE technology-related stories included: "Preparing for Disaster"; "Movie Magic"; "Engineers Invent Doppler-Based Stethoscope"; "RFID-based Recycling Technology Makes Philadelphia Greener"; and "Automotive Engineers Team Up to Improve Energy-Saving Technology."

The stories are aired as part of AIP's "Discoveries & Breakthroughs" news service that delivers a dozen vetted 90-second spots (in English and Spanish) to the top 66 television markets in the United States -- with a potential reach of 75 million viewers.

A limited number of DVDs of the IEEE technology-related TV spots can be obtained by sending an e-mail to p.mccarter@ieee.org.

To view the latest 90-second stories as well as almost 100 archived spots -- all on IEEE-related technologies, go to <http://www.aip.org/dbis/IEEE/>.

THE LATEST ISSUE OF IEEE'S "THE INSTITUTE" IS NOW AVAILABLE AT
<http://www.ieee.org/theinstitute>

Included in this issue:

- IEEE Honors Diverse Set of Visionaries: One word can sum up this year's IEEE awards recipients: visionaries. Their dreams led to developments in such modern technologies as wireless communications, HDTV, Earth observation systems, and DVD players. Read about the awards recipients at <http://bmsmail3.ieee.org:80/u/6775/04824637>
- System Upgrade Leads to One-Stop Shopping: The IEEE has launched a new online shopping area (shop.ieee.org) as part of a major upgrade to its core business management system. Individuals can now join the IEEE and its societies; renew their memberships; buy conference proceedings, standards, and other products; and subscribe to IEEE publications in one online session. Learn more at <http://bmsmail3.ieee.org:80/u/6776/04824637>
- Action Calendar: IEEE Board of Directors At its June meeting, the Board approved a new rolling submission process for projects submitted to the New Initiatives Committee. It also contributed money to the IEEE Foundation to support a new scholarship, named to honor a former IEEE executive director, and approved the selection of this year's recipient of the Eric Herz Outstanding Staff Member Award. For more information, visit <http://bmsmail3.ieee.org:80/u/6777/04824637>
- Marketplace of Ideas: Are Google Maps Too Close for Comfort? Google recently unveiled a free map service called Street View, which shows ground-level views of specific locations. Type in an address, and you can zoom in on a photo of that site and whatever is there--a house, parked cars, or even people. The service has stirred up concerns over loss of privacy, with some worried that their address, their car's license plate, or even their face will show up online. For example, the site has shown women sunbathing

on a school campus. Google says the photos are taken in public locations, so they're no different from what someone would see walking down the street. What do you think of Google's Street View service? Weigh in at institute@ieee.org

And read responses to May's question, which asked how you would feel about your behavior being monitored by cameras installed throughout your city, with the aim of deterring criminal activity. Answers ranged from being all for the initiative for safety's sake to comparing such monitoring to a Big Brother regime. See what members had to say at <http://bmsmail3.ieee.org:80/u/6779/04824637>

- Frances E. Allen: First Woman to Receive the Turing Award: Winning the top U.S. computer science award is a great honor, but being the first woman to receive it is even more special, says Frances E. Allen, recipient of the 2007 Turing Award. Read about her and her career at <http://bmsmail3.ieee.org:80/u/6780/04824637>
- IEEE Students Branch Out at Summer Congresses: When school lets out for the summer, IEEE student branches do not skip a beat. This year, congresses were held in England and Pakistan, with the goals of keeping students active in the IEEE and easing their transition from college to the professional world. There's more at <http://bmsmail3.ieee.org:80/u/6781/04824637>
- Mentoring: It Works! In our fast-paced world of ever-shorter product life cycles, throwaway merchandise, and--increasingly--throwaway employees, experience is often perceived to be of little value. Happily, this shortsighted attitude has not found a home at the IEEE, where a mentoring program whose chief asset is its members' experience is proving to be popular and successful. Read on at <http://bmsmail3.ieee.org:80/u/6783/04824637>
- New Tool for Saying No to Plagiarism. Plagiarists, beware! In the next few weeks the IEEE will begin testing a new plagiarism detection tool it is helping develop with CrossRef, an independent association of scientific, technical, and medical publishers. The product, CrossCheck, compares new manuscripts with published materials in its database. For more information, go to <http://bmsmail3.ieee.org:80/u/6784/04824637>
- Proceedings Stays Timely After 95 Years: Nearly a century old, Proceedings of the IEEE is still one of the institute's most popular journals. It's one of the most cited in other scientific, medical, and technical publications, and it recently had a facelift. Learn more at <http://bmsmail3.ieee.org:80/u/6785/04824637>
- Career Security for Technology Professionals: On 11 October, hear career advice from industry experts in the fields of medical electronics and computer security and learn about education programs that can help move you into the ranks of management. There also will be live Q&A sessions and a virtual exhibition hall where you can network with representatives from leading educational institutions. Register for Career Security for Technology Professionals, a new IEEE Spectrum Career Accelerator Forum, at <http://bmsmail3.ieee.org:80/u/6786/04824637>
- Discount Available for Embedded Systems Conference Members will receive a 10 percent discount when registering for the Embedded Systems Conference Boston, to be held 18 to 21 September, together with the RFID World Boston and SD (Software Development) Best Practices conferences. Use code UX28 to save the 10 percent on top of the early-bird registration specials at <http://bmsmail3.ieee.org:80/u/6787/04824637>

IEEE-USA Co-Sponsoring Symposium on Plug-in Hybrid Electric Vehicles

WASHINGTON (8 August 2007) -- Plug-in hybrid electric vehicles could greatly reduce U.S. gasoline consumption and carbon emissions if adopted on a large scale.

IEEE-USA is co-sponsoring a symposium on the technology and policy challenges of commercializing plug-in hybrid electric vehicles at the Omni Shoreham Hotel in Washington on 19 September. “Plug-in Hybrids: Accelerating Progress 2007” will bring together leaders in the manufacturing industry, electric utilities, universities, national laboratories and non-profits to explore what is needed to accelerate commercial use of plug-in vehicle technology.

Demonstration vehicles will be on display.

“Advances in power electronics, controls, computer systems, sensors, high-performance permanent-magnet electric motors and new battery technology are converging to create the opportunity to make the plug-in vehicle practical,” said Tom Schneider, general chair of the symposium and past chair of the IEEE-USA Energy Policy Committee. “If not today, then in the immediate future.”

Unlike gasoline-electric hybrids on the road now, which charge their batteries from an on-board engine while the vehicle is running, plug-in hybrid batteries can charge from an ordinary electric outlet. Thus, your battery can be charged from home while the engine is off.

By getting power from the electric grid, plug-in hybrids can increase the security of the United States by reducing dependence of foreign oil.

Drivers can save money by purchasing off-peak electricity and using less gasoline, and the environment benefits from reduced carbon emissions.

The symposium’s four panel sessions will explore: Electrification, Fuel Economy and the Environment; Plug-in Vehicles and the Electric Grid; New Technology Challenges and Opportunities; and the Need for Federal Action Now.

The registration fee is \$200 for industry and \$100 for government employees and students. Continental breakfast, lunch and coffee breaks are included. After 2 September, the fees jump to \$250 and \$125, respectively. For more information and to register, see <http://www.ieeeusa.org/policy/phev/default.asp>.

IEEE-USA is co-sponsoring the event with the IEEE New Technology Directions Committee, the Set America Free Coalition, the IEEE Power Electronics Society, the IEEE Society on Social Implications of Technology, the IEEE Vehicular Technology Society, the IEEE Computational Intelligence Society and the IEEE Power Engineering Society.

Go to <http://www.ieeeusa.org/policy/positions/PHEV0607.pdf> for more on plug-in hybrid vehicles.

President Signs IEEE-USA-Backed Innovation Legislation
WASHINGTON (10 August 2007) -- President George W. Bush signed into law the competitiveness and innovation legislation that IEEE-USA has supported in a White House signing ceremony Thursday.

By supporting research in science, technology, engineering and mathematics (STEM), and improving educational programs, the “America Competes Act” (H.R. 2272) will help the United States maintain its global leadership in science and technology.

“Our economy is growing in large part because America has the most ambitious, educated and innovative people in the world -- men and women who take risks, try out new ideas, and have the skills and courage to turn their dreams into new technologies and new businesses,” President Bush said. “To stay competitive in the global economy, we must continue to lead the world in human talent and creativity.”

Key provisions of the “America Competes Act” include:

- Doubling of the National Science Foundation (NSF) budget, the Department of Energy’s Office of Science budget and the National Institutes of Standards and Technology laboratory budget.
- Significant expansion of NSF funding for the Robert Noyce Teacher Scholarship Program and the agency’s Mathematics and Science Partnerships.
- Creation of a new Technology Innovation Program at the Department of Commerce, replacing the Advanced Technology Program.
- Doubling of funding for the Commerce Department’s Manufacturing Extension Partnership.
- Establishment of the Advanced Research Projects Agency for Energy at the Energy Department.

Strengthening STEM educational opportunities at the elementary through graduate school levels, increase funds to improve the skills of math and science teachers, and provide college scholarships for hundreds of future math and science teachers.

“Congress and the President are to be commended for authorizing legislation that can bolster U.S. national security, energy independence and the economy,” IEEE-USA President John Meredith said. “We are particularly pleased that it will improve STEM education for students so that the United States can continue to train the world’s finest scientists, engineers and mathematicians.”

The law, which enjoyed broad bipartisan support in both houses of Congress, authorizes \$43.3 billion in federal spending over the next three fiscal years (FY 2008-10). An appropriations bill will have to be signed into law to fund the legislation. Key elements of the President’s American Competitiveness Initiative are included, as are elements of the House Democrats’ Innovation Agenda and the Senate’s “Protecting America’s Competitive Edge (PACE) Act.” The law is based on recommendations contained in the National Academies’ “Rising Above the Gathering Storm” report and the Council on Competitiveness’ “Innovate America” report.

IEEE-USA was one of many organizations working proactively over the past three years in support of the legislation, both directly and in coalition.

IEEE-USA sent numerous letters to Congress; marshaled U.S. IEEE members to make more than 150 grassroots visits in support of the bill (many as part of annual Congressional Visits Days); issued grassroots alerts; co-sponsored congressional briefings (including the initial Nov. 2005 briefing to Congress on the “Gathering Storm” report and its recommendations); written articles; issued news releases; and provided April testimony to Congress on competitiveness and the importance of basic research.

IEEE-USA was also a signatory to the American Innovation Proclamation (<http://www.ieeeusa.org/policy/policy/2007/031307.pdf>); and worked in partnership with other organizations through the Task Force on the Future of American Innovation; the Computer Research and Innovation Coalition; the Science, Technology, Engineering and Math Coalition; and the Council on Competitiveness, to support the bill.

“This is not just an idle thought for those of us who have kids and grandkids,” said House Science and Technology Committee Chairman Bart Gordon (D-Tenn.), who introduced H.R. 2272. “I am very concerned

that the next generation of Americans can be the first generation of Americans to inherit a national standard of living less than their parents if we don't do something. This bill will help turn that corner.”

Sen. Lamar Alexander (R-Tenn.), who introduced the PACE Act last year with Sens. Jeff Bingaman (D-N.M.), Pete Domenici (R-N.M.) and Barbara Mikulski (D-Md.), praised the “America Competes Act.”

“This is the prime model of bipartisan cooperation on a massively important issue to every citizen of our country,” Alexander said. “The America Competes Act is a direct response to the challenge our country faces in keeping our brainpower advantage so our good jobs don’t go overseas to places like India and China.”

For more on the “America Competes Act,” go to http://www.science.house.gov/legislation/leg_highlights_detail.aspx?NewsID=1938

For more of the President’s remarks, see <http://www.whitehouse.gov/news/releases/2007/08/20070809-1.html>

The IEEE Cincinnati Section Executive Committee
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